

ABSTRACTRECEIVER

A receiver is operable to detect a synchronisation position for recovering data from a set of received signal samples. The receiver comprises a filter having an impulse response matched to a predetermined characteristic of the received signal and is operable to produce an output signal which is representative of the convolution of the impulse response and the received signal samples. The receiver includes a synchronisation detector operable to detect the synchronisation position from the filter output signal, and a data detector operable to detect and recover data from the set of received signal samples from the synchronisation position provided by the synchronisation detector. The synchronisation detector is operable to represent each of the received signal samples as a positive or negative constant in dependence upon the relative sign of the signal sample, and to represent the samples of the filter impulse response as a positive or negative constant in dependence upon the relative sign of the impulse response samples, and the filter is operable to convolve the impulse response with the received signal samples by logically combining the representation of the received signal samples and the impulse response to produce the output signal. The receiver is therefore provided with a facility for detecting a synchronisation position from an output of the filter matched to a characteristic of the received signal.

The output signal of the matched filter is formed by logically combining the filter impulse response and the received signal samples to form a representation of a convolution but with a substantially reduced number of computations.

[No Fig]

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